JAN 15 1930

VOLUME III NUMBER 4

AGRICULTURAL HISTORY

OCTOBER
1929

PUBLISHED QUARTERLY BY THE
AGRICULTURAL HISTORY SOCIETY

Made in United States of America

AGRICULTURAL HISTORY

VOLUME III OCTOBER, 1929 NUMBER 4

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Published Quarterly by
The Agricultural History Society
At Mt. Royal and Guilford Avenues, Baltimore, Maryland.
Editorial Office, Room 301, 1358 B St., S.W., Washington, D. C.

Annual Membership, $2.00 Life Membership, $100.00

Entered as second class matter October 12, 1928, at the post office at Baltimore, Md., under the Act of March 3, 1879.

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AGRICULTURAL HISTORY

VOLUME III OCTOBER, 1929 NUMBER 4

A CENTURY OF A GEORGIA PLANTATION

By E. MERTON COULTER*

This is the story of the rise, progress, and decline of a plantation—a story that is not only typical of many other plantations in the South, but symbolic of various characteristics which set the South apart in romance and reality.[1] It was located in Columbia County, Georgia, about a dozen miles up the Savannah River from Augusta. It had its beginning soon after the War of 1812. Black men were brought into wild lands to hew down green pine forests and thickets of sweetgums, festooned with bramble briers and yellow jessamines, to make way for fields of white cotton. The day of the planter had dawned.

The people who came to this plantation, like many others who settled in Georgia and the Southeast, migrated from Virginia. Through marriage and inheritance the lords of this plantation bore such names as Keith and Jones and Wilkinson. They built a comfortable home (though not with white columns and wide verandas), and they applied the secret of living well and genteely with what time and money they could command. There was not a great deal of leisure on this plantation for anyone—not nearly as much as tradition would have it. The master, though

* The author is professor of history at the University of Georgia and managing editor of the *Georgia Historical Quarterly*. During the current academic year he is visiting professor of American history at the University of Texas. He is also president of the Agricultural History Society.

[1] This study is based upon about five thousand plantation documents now in the possession of the author. It was read at the session devoted to "The Old South," of the annual meeting of the Mississippi Valley Historical Association at Vincennes, Indiana, April 25 to 27, 1929. It is here reprinted with permission from the *Mississippi Valley Historical Review* for December, 1929 (Vol. XVI, No. 3).

subletting much work to the overseer, had the general cares and oversight, which could not be escaped; the mistress had much sewing to do for the slaves; the children must attend school; and of course the slaves must be more or less constantly at work, for they existed for no other purpose. So, little leisure was left for anyone; yet the planter took rather regularly the Augusta *Chronicle & Sentinel* and the *Constitutionalist,* and the last decade before the Civil War found him a reader of the New York *Ledger* and the New York *Herald.* He read few books; the only reference to them in the written remains of this plantation is found in the will of one of its lords.

Yet there was no lack of appreciation for educational polish. The children attended the County Line Academy at five dollars a quarter for tuition, and studied French and the classics. When they grew older they attended the University of Georgia, Emory College, and Georgetown University in Washington. A daughter of the family, in order to be a true representative of antebellum society, went away to a boarding-school, and what could be more proper than to go to one in Virginia![2]

Here this young girl, by name Sarah Jane Jones, went through all the romantic feelings, heart-flutters, and developments of character and polish that attached themselves to the planter's daughter of history. It was soon evident from her letters back home that she was studying nothing very seriously except how to become a fine lady. "Our dancing school is over," she wrote, "and I hope I have improved in my dancing. I am still taking music lessons and I have learned the Star Spangle Banner and I am now learning the Mermaid's Waltz." Her piano tuner was a "piano maker and plays himself and speaks nine different languages." She begged her family in one of her letters to send her brothers to a singing school in order that they might be able to sing with her when she should return.

But mostly it was the eternal feminine in her that cropped out. She had scarcely arrived in Virginia before she was writing, "I expect that I am so much grown that you would not

[2] At Warrenton in Fauquier County. The time was during the early eighteen hundred fifties.

know me. I am wearing long dresses and I look very tall but not very large and you will soon have to dress me like a young lady, but I dont think of turning out as I am not allowed to think of beaus. I wish when you come on you will bring all my mother's jewelry as all the girls are wearing it and I would like to have mine. I shall take good care of it as it was my mother's." Jewelry was much on her mind. What she inherited from her mother did not seem to be enough. Wise, though young, she wrote her father, "I write to tell you that I have gotten the ear rings and the price of them is 8 dollars and I got a breast pin that cost 11 dollars and I can nearly pay for it and will you give me 4 more which will pay for it and I would like to get a bracelet to suit the ear rings and breast pin if you will send me enough money to get them please write to me as soon as you get this so that I may pay for them."

In all the gaiety of school life and visitings at White Sulphur Springs and other watering places, this Georgia school girl remembered the slaves with affection (always calling them servants). "Give my love to all the servants and tell them I want to see them" is a typical expression. Yet she came near forgetting her native state, so much did she like the life of Virginia. Her uncle wrote: "She continues to protest vehemently against returning to Georgia, and I do not wonder at her dislike to leave Fauquier, for it is certainly the most fascinating country on the face of the globe." One day she wrote her father, "There is a great deal of courting and marrying going on now among my most intimate friends." She did not, however, succumb to a Cavalier; she returned to Georgia, married, and spent the remainder of her life on a plantation.

Another belle on this Columbia County plantation was Judith Keith, a ward of the lord of the plantation, who inherited great wealth from her father. She developed extravagant tastes there, unaided by the splendor of Virginia watering places and boarding-schools. Though abundantly able, she never attended school outside of Columbia County. Among the articles of splendor which Miss Judith considered necessary to make her a fine lady in Georgia were: neck ribbons, worked collars, silk shawls (fancy

and plain, large and small, and of the blanket variety), kid gloves and long picnic gloves, silk mittens, hooks and eyes and pins, feather fans (blue and otherwise), muslin, side combs and shell tuck combs, silk handkerchiefs, white silk hose, velvet ribbons and bunches of artificial flowers, white satins and satin ribbons, linen tape, daisy buttons, cord and tassels, "Marsales skirts," cashmere gloves, French marked collars, fancy handkerchiefs, Moselle fans, blue and pink muslins, fig lace, Moravian hose, chenille, English silk hose, parasol, and thirteen pairs of kid slippers a year, as well as yards of calico (plain, English, and German), brown Holland, and Irish linen. Miss Judith soon married, as might well be guessed, and moved on to the newer lands and greater fortunes to be found in Alabama, another recruit for the great migration to the Southwest, which had long been going on.

What of the lord of the plantation and the larger family life? Equipped with a $125 gold watch, which he bought in Liverpool, and a spy glass, which was kept repaired for him in Augusta, he was enabled to wander over his plantation and keep time on his laborers and espy them from afar. A shower bath, which cost $50, awaited him after his day's activities. But he had leisure enough to make him a gentleman, and ability enough to act the part. He frequently made trips out of the state, principally northward, both for pleasure and profit. He spent a considerable part of the time on his trips at watering places, and when in the cities stopped at the best hotels. He visited such resorts as Saratoga Springs (stopping always at Congress Hall and never spending less than a week), Montvale Springs, Rockbridge Alum Springs, Warm Springs, and Sharon Springs. When in New York, he stopped at the Astor House, and when he visited Washington he stayed at the National Hotel and Brown's Marble Hotel. He must not only act the part of a gentleman, he must dress the part. In 1857, he replenished his wardrobe in this wise: a black frock coat, Cass pants, silk vest, raglan overcoat, fan Cass frock coat, three pairs of pants, three Cass vests (checked, mixed, and black), nine shirts (three merino), six pairs of half-hose, two stocks, silk handkerchiefs, a hair brush, a clothes brush, and a pair of Cass gloves.

At home there must be leisure and gentility. Picnics, with boards of managers and printed formal invitations, were frequently given. Evenings at parties and dances came now and then. A mid-summer entertainment in 1855 called for these purchases: raisins, currants, citrons, cinnamon, cloves, nutmegs, brandy, wine, mackerel, pulverized sugar, pickles, cheese, a basket of champagne, assorted cordials, almonds, candy kisses, candles, yeast powders, pepper, vinegar, a large tub, tea, coffee, salt, ginger, gelatine, lemon and vanilla extracts, and sugar ornaments. For the proper celebration of Christmas (1840) by a southern planter the following was required: six and one-half gallons of whiskey, twenty-nine gallons of wine, and half a gallon of brandy.

Plantations could not have arisen without slavery, and without forced labor they could not have continued long. Slaves not only meant labor but they meant capital. The supply must always be kept up, and a few more than necessary could always be disposed of. Scarcely a year went by without new purchases. In 1836, $5,000 was invested in slaves. There were about seventy-five slaves on this plantation and one hundred and forty on an adjoining one, which in 1842, largely came to be combined with the first through inheritance and purchase. With such a large number, the degree of personal contact and affection between master and servant is surprising. As previously indicated, members of the family away on visits were almost as mindful in their letters of the servants as they were of brothers and sisters and parents.

Marshall Keith, who died in 1841, and whose plantation came to be largely identified with the one under discussion, showed in his will remarkable consideration for his slaves.[3] Some he willed to his various kinsfolk, others he left to be sold with the estate. Freedom in Liberia he willed to three. "I give to the Secretary of the Colonization Society the following negroes vizt. Alfred, Daniel, and Thornton for the purpose of being sent to Liberia and also five shares of the Mechanics Bank of Augusta

[3] A copy of this will is on file in the courthouse of Columbia County, at Appling. The will was made May 8, 1839, and was recorded January 6, 1842.

for each, the proceeds to be paid to them or the survivor on their arrival in Liberia and for no other use or purpose & as I leave it optional with them to go or not should they or either of them refuse," then they should be held by the executors of the estate for various uses.

Even a more remarkable consideration for his slaves he showed in this provision of his will: "It is my desire my servant Ishmael should be freed but if that cannot be accomplished I give him to my executors hereinafter named in trust for his own use to go wherever he may please, and if it suits him to take with him or sell or dispose of the property hereinafter devised to my executors in trust for said Ishmael." Thereupon Keith willed him one hundred fifty shares of stock of the Mechanics Bank of Augusta and a tract of land for a home for him and his two sisters, Minny and Elizabeth. But what good was a plantation, however small it might be, without slaves? So Keith then did an unusual thing: He willed to those three negroes whom he had set free, twelve of his slaves, together with blacksmith tools, cart and oxen, a horse, three mules, a sufficient stock of cattle, sheep, and hogs, household furniture, and enough corn, fodder, and pork to last for one year. To Minny he gave one hundred shares of Mechanics Bank stock, together with two slaves, household furniture, a spinning wheel, and a loom. To Elizabeth he gave fifteen shares of bank stock and household furniture; and to other negroes he gave bank stock and other property. The will then charged the executors not to "suffer those servants I have freed or left in trust to live in or within three miles of any Town or village in Georgia or Carolina."

By usage in the commonwealth of Georgia, negroes set free from slavery were required to move beyond the limits of the state.[4] So Ishmael, his mother Nancy, and his two sisters, Minny and Elizabeth, started upon their journey northward into the land of snowy winters. They crossed the Ohio and settled in and around Cincinnati.

[4] State law forbade the liberation of slaves without permission of the legislature. The law was often ignored and the courts were liberal in its interpretation. See T. R. R. Cobb (ed.), *A Digest of the Statute Laws of the State of Georgia* (Athens, 1851), 983, 991, 1125.

In southern Ohio they bought flat corn lands and began farming, but everything was so different; the floods covered their lands with water, the winters were bitterly cold—they were soon longing for their old Georgia plantation and friends again. The negroes who were freed to go to Liberia refused to go, and were permitted to remain in America. They went to Ohio and helped to add to the discontent of Ishmael and his group. The Ohio freedmen constantly wrote endearing letters to their former Georgia white acquaintances, for, in the words of one, "nothing affords more pleasure than to hear from my native state and those with whom I have spent out the greater part of my days with." Ishmael wrote in 1844: "Old Man Ned is very anxious to return and so is Alfred they have been prevailing with me to return with them as for myself I need not Say as you know what my wishes on that point knowing that I should be infringing the laws of the country to return thence[5] and also being myself liable when I could have no protection unless there had been something done in my favor which I suppose could be by the interposition of friends."

These expatriated freedmen never expected further happiness except it be with their former white friends either in Georgia or in heaven. Their chances of returning to Georgia seemed remote, so they concentrated their attention on heaven. Their letters generally closed in this wise: "I may never see you all again in this world should we not may we meet in the Sweet fields of elesian where we shall be done with the troubles of this unfriendly world." The longings of Old Ned are set forth in this letter of his own hand and composition: "I have met with the opportunity of writing you a few lines to inform you of my present situation which is very disagreeable. I have now a better opportunity of giving you farther ac Count of this Country than I had in other letter this Climate is two colde for me I want to come back to georgia a gain and bring my family if I could be permitted to return. I wish that I was just back there in that settlement a gain doing the work of that settlement.

[5] See *ibid.*, 990, 1009.

"I have tride Cincinnati & have tried here but there is no chance for me to live here I have worked very hard since I have been here & I am now in very bad helth but I hope that thes feu lines may find you all well & my love to you & family an all the rest of the friends tell my Children howdy and all of rest of my friend

"if you will permit me to come back will you be so kind as to write me if I Can Come I will try to start next September you need not to put yourself to the trouble of Sending as you promist I will try to come myself. . . . I want to hear very bad how you all are getting along and how the crops are nothing more but remaining your humble servant

Edward Keith [Old Ned]"

This group of Ohio freedmen was in fact much better off in material wealth than the majority of people in Ohio. They sold their possessions in Georgia, including most of their slaves, and on their 285 shares of bank stock they drew yearly dividends as high as $1,100. By 1849 they had received almost $30,000 from their Georgia rights and properties.

But what was the lot of the slaves who were doomed to live on this Georgia plantation? They seem to have had no desire to exchange places with their Ohio friends. There was only one runaway whose escapade was recorded in the plantation chronicles, where it is written that he ran southward, only to be taken in Savannah and returned. The slaves planted their small patches of corn and cotton and vegetables from which they added to their table and to their supply of money, for they were allowed to sell their corn and cotton. When they became sick, or believed themselves to be so, the plantation doctor put in his appearance with his pills and his blisterings and his bleedings. Some years his bill for services ran up almost to $200, and it was the planter's especial duty to meet the expenses of his sick slaves. Sometimes the planters themselves fell sick, and then the doctor brought out more elaborate remedies, which might from their variety of smells and tastes cure patients more sick in mind than body. A mélange administered to a lord of 140 slaves and 4,000 acres of land in 1841 follows: tonic, pills (plain, quinine,

and chalybeate), chloric ether, ash solution, tartar emetic, camphor, jalap, calomel, nutmegs, cinnamon, Dover's powders, sulphuric morphine, zinc sulphate, castor oil, nitro muriatic acid, and copperas. The patient died.

As heretofore stated, this plantation had about seventy-five slaves upon it; its acreage was from 2,000 to 3,000. Land was added now and then, but seldom was any sold. Like many other planters, the lord of this plantation, being really a capitalist applying his resources to farming, owned land in other parts of the state. His first interest was in producing cotton, but this was by no means his only important concern. He raised much corn and produced a great deal of pork. He believed in mixed husbandry and practiced it. In 1850, besides his 73 slaves, he had 95 cattle, 80 sheep, 17 mules, 4 horses, and a carriage worth $450. He owned 2,167 acres of land and raised on it 108 bales of cotton and 4,700 bushels of corn. In 1856 he produced 6,207 pounds of pork, "102 bales [of cotton] the shortest crop I ever made," which he sold for $4,653.91, and 4,500 bushels of corn. In 1858 his cotton crop amounted to 136 bales selling for $6,386. This year he planted 415 acres of cotton and 320 acres of corn.

In 1861 there began such a revolution as has fallen to the lot of but few peoples in the world's history to suffer. William Jones, the lord of the plantation at this time, could not have foreseen what was in store for his organized form of existence, both economic and social, but he had belonged to a political school which had greatly mistrusted the Democrats, who were in charge of the present developments. Like his fellows all over the South, he was carried away by the enthusiasm for the new world that so many thought was fast approaching. Even before Georgia had joined in the movement, he and others organized the Fredonia Guards and mutually pledged themselves "to protect each other our families Homes and property to the best of our ability and to enforce the Laws of [our] Beloved State."[6] Against what enemy were they organizing? They, forgetful of every thing they had ever learned throughout their lives, had hazy

[6] This is quoted from the articles of agreement, which contains a list of the volunteers.

notions and fears that the enslaved black man would arise and smite his master—how unjustly they were misjudging him, four years of desolating war would show.

Fighting soon began, but not in Columbia County, Georgia, nor was it ever to spread its horrors over the corn and cotton fields and into the big house and negro cabins of this plantation. Yet the effects of the great tragedy were soon being felt. One of the lord's sons bade his family and the servants farewell and went off to Augusta to join the armies of the Confederate States of America. Three months later the other son went to Savannah to join the forces assembling there to drive out the invaders. The war continued with increasing fury until white men fighting themselves blue, began calling upon black men to help. As Sherman sought to break through the mountain barriers into the heart of Georgia, slaves from this Savannah River plantation were called away to Atlanta to work upon the fortifications, and black Moses was sent into the Confederate armies to cook until physical disabilities got for him an honorable discharge which he carried back as proudly as the proudest Anglo-Saxon.

Columbia County knew there was war not only because slaves and planter's sons marched away, but also because the families of poor people became hungry and ragged—their heads and older sons had also marched away to join a war they had had no conscious part in bringing on. The lord of the plantation was now selected by the inferior court, to feed these hungry families, using money provided by the government. The Confederate Government itself became poor and hungry, as the war dragged on; and then it made a law that all large planters must give to it one-tenth of their agricultural products.[7] So well did this law work that the Jones plantation gave 1440 pounds of pork to a government whose chief support had collapsed fifteen days previously.

Though King Cotton had given the South great confidence and faith in the ultimate attainment of everything they might

[7] J. C. Schwab, *The Confederate States of America, 1861–1865* (New York, 1901), 292.

desire, scarcely had the war begun before the cry went up that cotton must be dethroned and corn and other food crops must take his place. Laws were enacted in Georgia against the fallen idol, and patriotism was measured by how much it was detested and spurned. By 1862 the cotton crop on this plantation had dropped to 41 bales, and by 1864 the pork production had mounted to 11,119 pounds. In addition to large corn crops, wheat and oats were being raised. Patriotic, indeed, was the lord of this plantation with sons and slaves in the army, with cotton pulled down, with food crops elevated, and with time and money spent in feeding the families of the Confederate poor.

Sherman pierced the heart of the Confederacy with fire and lance; and soon the leader of a once-mighty power was fleeing for safety. The dream of millions a few years before had now forever vanished as the South awoke to defeat, degradation, and ruin. The accumulations of a century socially, politically, and economically were forever swept away. Everything must be constructed anew from a void. Writes one sufferer, "The close of the war has left us in a bad fix in common with every one else in this country rendering the rich poor & the poor destitute. No class of society & scarcely any individual has escaped its desolating influence."[8]

The lord of a plantation with three-quarters of a hundred black retainers, restless and free, must now count as less than nothing his four years of patriotic support of a fallen government. He must now take an oath of allegiance to a new power bent upon the utter destruction of the social and economie organization that had made him a gentleman, that had given him time to be cultured, but an organization that had robbed black men of their liberty—something they missed not nearly so much as people far away, who knew not the negro, thought. In the summer of 1865, Mr. Jones had more than 2,000 acres of land but no workmen. He was in a desperate plight; his crops must be cultivated and later harvested. In May he made an agreement with freedmen Dred and Sam and all the others.

[8] From James Keith, Warrenton, Virginia, September 26, 1865.

He would pay them one-half of all the corn, peas, fodder, wheat, cotton, and oats, "and they on their part promise to work faithfully and to obey all orders issued or given to them by the employer or his agent—and should they become troublesome or disobey any order that is given them they are to leave the place or plantation on which they are living immediately and forfeit all claims, rights, or interest in the crops above mentioned."

Here was Jones's solution of his labor problem; but would the guardians of all those black men set free approve it? The agent of the Freedmen's Bureau replied, "I recommend to all hands on Mr. Jones's plantation to accept the terms herein proposed assuring them that it is the best they can do at present. The understanding is that no punishment is to be inflicted by the employer or his agent and all difficulty between the employer and negroes is to be settled at this office." The result was that these freedmen would rather have money in their pockets than the promise of part of a crop—so money they got, which meant freedom from immediate economic restraint.

But the freedmen were too prone to believe that freedom meant escape, not only from all the old rules but also from all labor, and that it gave them the right to attach unto themselves anything that might be acquired when no one was looking. Hence it was recorded in the annals of Jones that some of his finest mules were missing the night after New Year's of 1866, and thereupon Jones hired a nightwatchman. Yet he set down in the records this same year, "I have six silver forks & 5 large spoons & 4 tea spoons & 2 butter knives. The balance has been stolen." The first crop under free labor was reduced almost three-fourths in corn and two-thirds in cotton. The running of the plantation cost him $4,206 and his income was $5,150. Exactly half of his expenses were for negro wages. The next year he paid his freedmen laborers $2,541, and lost on his plantation $611.

The wage system proved to be very unsatisfactory. When money jingled in the pockets of the negro, there was an almost irresistible impulse to flee from work. Soon the owner of these many half-idle acres, now William Harrison Jones, found out

that it was better to furnish the land, mules, and a few other necessities and measure his payment to his laborers in the crop raised, either a fixed amount or a percentage. This system appealed to the negro for he was now master. Another method was to rent the land for a money income, as for example, five dollars an acre.

During the 1880's and 1890's these arrangements were being used, but the day of the old plantation had passed. Times, indeed, had changed. The labor force was no longer a unit and it could not be depended upon. The seams of disintegration began to show when twenty-five acre lots were doled out to any comers who would promise to pay the rent. The old home place no longer had its charm as the center of a busy life revolving around a great social and economic establishment. Unlike his ante-bellum predecessor, the owner now became interested in religion and moral reform, taking refuge therein from the thoughts of poverty and thwarted hopes. He became secretary and treasurer of the community Sunday school, calling the roll each Sunday and adding up the pennies—how different from the ante-bellum gentleman calling the roll of his slaves and counting his bales of cotton! Instead of buying his gallons of wines and whiskeys, he now wrote and delivered temperance lectures.

The children of this generation went away to school—but they did not come back. A son was educated at the University of Georgia and became a civil engineer for great railway companies—industry had conquered agriculture with him. A daughter attended the Cincinnati Conservatory of Music and chose the profession of music teacher in states far from Georgia. The old plantation has disintegrated into smaller holdings, while great stretches which once formed an ante-bellum plantation have slid hurriedly out of the grasp of man back into green pine forests and thickets of sweetgums, festooned with yellow jessamines and bramble briers. The yard of the old home has grown into a wilderness of sedge grass, and the building has all but tumbled down. From the primeval back to the primeval; the circuit has been completed—and all within a century.

THE SIZE OF ENGLISH CATTLE IN THE EIGHTEENTH CENTURY

By G. E. Fussell*

Is history only the fiction we have agreed to accept about the past? When some of the currently reiterated statements are examined, it is difficult not to think so: based in some dogmatic assertion, which has seized upon the imaginations of later writers, and been depicted by them as genuine and irrefragable evidence, our assumptions need constant revision, not only in the light of new documents, but in the illumination to be found in a closer reading of the old. Such a test it is here proposed to apply to the accepted notion of the improvement in the average size of cattle, as meat supply, which was obtained in the course of the 18th century.

In this connection the preliminary dogmatic assertion was made by Sir John Sinclair.[1] He cites D'Avenant's table of 1710, which is, of course, derived from Gregory King, to show that beeves weighed at Smithfield averaged only 370 pounds, dead weight, and calves but 50 pounds at that date, while at the time of writing the bullocks killed in London weighed on an average 800 pounds and calves 148 pounds. This statement he repeated in an *Address to the Board of Agriculture*, published as App. B to the *First Report to the Select Committee on Waste Lands* of 1795. Eden,[2] while he repeats these figures, is sufficiently conservative to say that the size and weight, both of cattle and sheep, have probably increased at least one-fourth since 1732,[3] a contention certainly within the limits of the figures he quotes. By this

* British Ministry of Agriculture and Fisheries.

[1] *History of the Public Revenue* (1785), pt. 3 (ed. of 1790), 201.

[2] *State of the Poor* (1797), III, App., 88.

[3] See also *First Report, id.*, App. A, 11. Also *General Report on Enclosures* (1808), 375, for repetition of this estimate.

trinity of assertion the dogma clearly became sanctified, and we find that the modern historians, almost without exception, unquestionably accept them as a true gauge of the progress in beef animal production between the specified dates. The exceptions sometimes even improve upon the 100 per cent increase which the figures show.

Among the latter may be numbered Thorold Rogers, who says that in the beginning of the century the average was about 400 pounds, while in Arthur Young's time, a somewhat lengthy period (his writing life was from 1768 to 1815) the cattle constantly reached 1,200 pounds;[4] and again that by 1770 the breeds of cattle and sheep were greatly improved, threefold in many cases within living memory,[5] while he contends that very little progress ensued between 1780 and 1841.[6] Sir William Ashley shares this favourable opinion. The Smithfield ox had increased in weight twice or thrice during the century, he believes.[7] Ernle[8] and William Cunningham[9] are not prepared to advance on Sinclair's sacrosanct figures contenting themselves with quoting, although in justice to Ernle, the value of whose work no one could have the effrontery to deprecate, it must be added that he admits that this part of King's estimates mainly depended upon guesswork.[10] Exceptions who do not scruple to cast some doubt upon these measures are Russell M. Garnier and W. H. R. Curtler. They do not, however, bring any more conclusive evidence to their support. The former[11] contents himself with referring to the weights given by Giles Jacob in his *Country Gentleman's Vade Mecum* of 1717, which are, according to this quotation, 900 pounds for an ox and 500 pounds for a cow; the latter citing the excep-

[4] *Six Centuries of Work and Wages* (1884), 477.

[5] *Ibid.*, 482.

[6] *Ibid.*, 501.

[7] *The Economic Organization of England, An Outline History* (London, 1914), 135.

[8] *English Farming, Past and Present* (London, 1927), 188.

[9] *Growth of English Industry and Commerce* (1912), II, 705.

[10] *Id.*, ed. of 1912, 145.

[11] *History of English Landed Interest, Its Customs, Laws and Agriculture* (London, 1892–93), 263.

tionally large bullocks seen by Daniel Defoe at Sir John Fagg's near Steyning, suggests[12] that their weights, unusual as they were, go to prove that cattle could then be grown to a much greater size than is generally credited. Sinclair's figures are once more quoted by A. N. Duckham,[13] but he considerately adds that the baronet unfortunately enjoyed a reputation for inaccuracy, and that other more reliable records suggest that seventeenth century cattle were about 50 per cent larger than the earlier figure suggests. He does not say what these records are.

From what has been said, it will, perhaps seem that modern opinion on this point is a farrago of contention, but it really amounts to little more than this. The most authoritative writers have agreed to accept Sinclair's statement, or to form a judgment of the case which leads them to believe it should be bettered: on the other side, a small, but very pertinent, doubt has been expressed.

When he postulated his figures Sinclair was certain that agriculture had recently made great strides. He was the familiar friend of many improvers, and he was to become the president of the Board of Agriculture; he wanted to make his belief tangible to other people and nothing is so potent for this purpose as figures. It is perhaps not possible to say definitely that this measure of the increase in meat production is incorrect, but it depends upon other factors such as the number of cattle in the country at each date, and the age at which they were commonly slaughtered, because, of course, even though they had not increased in total number, or average weight, but were matured at say 3 instead of 4 years old, the meat supply would have been correspondingly increased.

As it stands the picture of the improvement in cattle breeding during the eighteenth century we possess is confused and unreliable. It will be clarified if a less arbitrary method of expressing it is adopted. A figure pretending to give an average weight of a carcass at different periods is an excellent measure of the meat

[12] *A Short History of English Agriculture* (Oxford, 1909), 168.

[13] "Baby Beef," *Journal of the Royal Agricultural Society of England*, LXXXVII (1926), 125.

supply, if the number of cattle is known, but in the eighteenth century the number of cattle was only guessed at, and cannot now be ascertained. A more satisfactory method of estimating the improvement in meat production is to endeavour to ascertain the distribution of the different breeds at different times, to examine the statements of contemporaries about the usual size of the breeds, and so to discover how great an increment of meat was gained by better methods of breeding directed specifically towards that purpose.

The distribution of the breeds has been sufficiently detailed by Ernle, and can be briefly described in his words. For an estimate of the seventeenth century views on stockbreeding he uses Gervase Markham's *Cheape and Good Husbandry* (ed. of 1631) and John Mortimer's *The Whole Art of Husbandry in the Way of Managing and Improving Land* (1707) and says,

> Among cattle, the best breeds "for meat" were the long-horned cattle of Yorkshire, Derbyshire, Lancashire and Staffordshire. The tall, long-legged Lincolns, generally "pide" with more white than any other colour, were reckoned the best for "labour and draught." "Those in Somersetshire and Gloucestershire are generally of a blood-red colour, in all shapes like unto those in Lincolne-shire and fittest for their uses." So for Markham. Mortimer adds other breeds "A good hardy sort for fatting on barren or middling Sort of Land are your *Angleseys* and *Welch*. The hardiest are the *Scotch*." The best breed for milking in his opinion was "the longlegged, shorthorned Cow of the *Dutch* breed" chiefly found in Lincolnshire and Kent.[14]

No very different distribution or improvement had taken place by 1786.

> In cattle, again, no true standard of shape was recognized. Size was the only criterion of merit. . . . The pail and the plough set the standard; the butcher was ignored. Each breeding county, however, had its native varieties, classified into Middle-horns, prevailing in the South and West of England, in Wales and in Scotland; Long-horns in the North-West of England and the Midlands; and short-horns, in the North-East, Yorkshire and Durham.
>
> The Middle-horns in the South and West of England were red cattle of a uniform type; the North Devons, nimble and free of movement, were unrivalled in the yoke; the Herefords, not yet bred with white faces, were heavier animals which fattened to a greater weight; the Sussex breed came midway in size between the two. . . . . Other middle-horned breeds were the black Pembrokes, like their

[14] *Op. cit.*, 137.

TABLE I

REFERENCE	LONGHORN	SHORTHORN	UNIDENTIFIED	REMARKS
	pounds	*pounds*	*pounds*	
Giles Jacob. The County Gentleman's Vade Mecum, 1717, p. 14			900–1000	"Has heard it said," Large ox,
			700	about middle size
			500– 600	Large bullocks or cows
			400– 500	Middle
R. Bradley. A Complete Body of Husbandry, 1727, p. 316			600– 640	Fatting cattle should be . . . . when fat
Museum Rusticum et Commerciale. VI, 30th April, 1766, p. 304, p. 313			1605	Bull killed near Stafford, not extraordinary familiar in Tees Vale
England Displayed. Revised by P. Russell, 1769			623	7 steers, each. "Fatted to"
II, 72	448			Cheshire
II, 88	560– 840			Lancashire
A. Young, circa 1770	*Northern Tour.*	*Northern Tour.*	*Eastern Tour.*	
	Vol. *p.*	*Vol.* *p.*		
	III. 97 560	I. 194 840– 980–1400		800 Essex
	103 700	210 1120	*Experl. Agric.*	
	109 700	307 700	p. 470	1050 2 large cows
	117 840–1120	II. 6 980–1120	471	476
	160 560– 840	98 1120	472	1050 2 oxen beasts of
	181 420– 700	146 cows 700		420– 700
	243 cow 448	157 700		
	260 960–1600	175 700	*Rural Economy.*	
	268 840–1120	202 1120	p. 43	700 Steers
	335 1200	700		Steers or heifers
		232 840		560
	312 1200*	386 840–1680		840– 980 Oxen
		424 700	105	560 Oxen
		440 700	107	980 Oxen
		III. 19 1400	121	840–1120 Oxen
		27 840–1120	133	1260–1400 Oxen
		31 up to 2100	134	Cow (middling)
		55 980–1120		630
		64 2100		560 Cow (middling)
		71 840–1680		490 Ox
		78 700–1400		

		85	700	560	Ox
				135 700	Ox
		Eastern Tour.		770	Ox
		I. 388	1220	139 630	Milch cow
		404	1400	140 630	Milch cow
		469	1400–1680	142 630	Milch cow
		III. 150	1400	147	Steer or heifer
				630	
				1050	Ox
				560	Steers
				630	Steers
				630	Steers
				560	Steers
				148 630	Cow
				630	Ox
				700	Steers
Matthew Peters, The Rational Farmer, 1771, p. 12				784–896	Ploughing heavy clay can be done with 4 of these oxen
p. 59				672	Discussing rations. "Store of 6 cwt."
Chas. Varlo. A New System of Husbandry, 4th Ed. 1774 II, p. 86			1820		2 Oxen. Estimated weight: belonged to Sir T. Haggerston.
III, p. 191				1120–1400	Large ox. Speaking of food consumption
Thos. Bowden. The Farmer's Director, 1776, p. 41				448	Small bullocks would eat . . . .
Agricola Sylvan. The Farmer's Magazine, 1779, IV, p. 379			2124		Remarkable large ox

* Vale of Evesham may be Glos.

Cornish relatives, excellent for the small farmer, and the Red Glamorgans, which in the eighteenth century were highly esteemed as an all-round breed. Every year thousands of the black Angleseys were swum across the Menai Straits to the mainland. Scotland had its West Highlanders; its Ayrshires, second to none as milkers; its Galloways and its Anguses, originally middle-horned, but now becoming polled, which were driven southwards to the October and November fairs of Norfolk and Suffolk to be fattened for the London markets. On these imported Galloways were founded the Norfolk breed of polled cattle and the Suffolk Duns once famous all over England for their milking qualities. The North-West of England and the Midlands were occupied by the Long-horns. Of these the most celebrated were the Lancashires or Cravens, so called from their home in the corner of the West Riding of Yorkshire which borders on Lancashire and Westmoreland. . . . To the same stock belonged the brindled or grizzled Staffordshires valued, like the Cravens, for the dairy and for meat. The North of Lincolnshire, the East Riding of Yorkshire and Durham were famous for the enormous size of their short-horned cattle, which were extraordinary milkers. The Holderness breed, as it was called before its establishment on the banks of the Tees. ....

Stock-breeding as applied to both cattle and sheep, was the haphazard union of nobody's son with everybody's daughter. . . . . [15]

The distribution of the breeds is shown by these two extracts to have remained stationary from the seventeenth to the third quarter of the eighteenth century. The opinion is also expressed that there had been little or no improvement in the general standard of the animals bred. There is no indication that Ernle thought there had been any large increase in carcass weight and the supposition is emphatically negatived by the last sentence quoted. There is no attempt to give any arithmetical measure of any improvement, which may have been made, but the statements of weights which occur from time to time in the works of the agricultural writers confirm the supposition that the carcasses produced in 1786 were much about the same size as had been familiar to breeders and graziers for at least a century (Table I). These weights are stated in different connexions, many of which lead us to suppose that the writer is giving an average unlikely to disturb his reader's faith in his writings by being exceptional.

Some of the writers unfortunately do not identify the breeds of which they are speaking, evidently considering an ox was an ox and a cow a cow without further qualms. So far as size of

[15] *Op. cit.*, 179 ff.

carcass is concerned it seems to be the general opinion that the Scots, the Norfolk and Suffolk breeds and the Welch were the smallest breeds. Such figures as we have of Scots and Norfolks, prior to the publication of Culley's figures, do not indicate that any material change had taken place in these breeds. The weights are much the same throughout the period,[16] apparently reaching so high a weight as 560 pounds only in exceptional circumstances. The Norfolk and Welch were similar in size, but the earliest recorded weights of these seem to be Young's mention of two Norfolks of 476 pounds[17] and of Welch providing carcasses ranging from 640 to 720 pounds, a somewhat larger animal.[18]

About the middle-horns of Devon and Sussex we have little early information, but Daniel Defoe[19] mentions four large animals bred by Sir John Fagg of Steyning, which were 1120 pounds dead weight. No one else seems to have taken the trouble to mention weights until Young did so. Probably the writers thought that information so generally known was of no consequence. In his *Eastern Tour*, Young mentions Sussex cattle of 840–1120 pounds[20] and another example of 960 pounds[21] while his record of the Devon was 1120–1400 pounds.[22] If these

[16] James Edwin Thorold Rogers, *A History of Agriculture and Prices in England* (Oxford, 1866–1902), VII, pt. 2, "Account of the Profits arising from the Farm at Holkham, and the Disbursements for Management," Michaelmas, 1731/37, p. 638, 26 bullocks sold average of 462 lbs.; Richard Bradley, *A Complete Body of Husbandry, Collected from the Practice and Experience of the Most Considerable Farmers in Britain* (London, 1727), 316,—Small Scotch should be 40/50 st. (8 pounds) when fat, *i.e.*, 320/400 pounds, Robert Billing, *An Account of Carrots and their great use in feeding Cattle* (London, 1765), 16, –9 steers (Scots) 560 pounds each; *ibid.*, 17,—another 480 pounds; *Museum Rusticum et Commerciale* (London, 1764–66), VI, 314,—7 Scots fatted to 490 pounds each; Arthur Young, *A Six Months Tour Through the North of England* (London, 1770), II, 2440,—490 pounds; also his *A Course of Experimental Agriculture* (Dublin, 1770), 467,—n. of 476 pounds, 2 of 490 pounds; and his *The Farmer's Tour Through the East of England* (London, 1771), II, 37,—420 pounds.

[17] *A Course of Experimental Agriculture* (Dublin, 1770), 496.

[18] *The Farmer's Tour Through the East of England* (London, 1771), III, 172.

[19] *A Tour through the whole Island of Great Britain* (1724–26), I, Letter II, 64.

[20] III, 123.

[21] III, 150.

[22] III, 346.

examples can be taken as characteristic of the breeds at the time they were recorded, there can have been no very great change in the quantity of meat each animal of these breeds supplied to the increasing population during the first three quarters of the eighteenth century.

Again the weights given by Young for both Longhorn and Shorthorn cattle show a wide range of variation and those of the unidentified cattle mentioned by the writers cited in Table I are similarly divergent. These divergencies are not, however, confined to one period: they continue to be noticed. And it is remarkable that many writers speak of the Lancashire cattle as being the largest and best in England,[23] while the citation of *England Displayed* shows them to have been on the average of a comparatively moderate size. It is reasonable to believe that the heavier weights were the less usual animals, and it is probable that they were mostly bred by "improvers" so that their proportion to the total number of animals bred was comparatively small.

In his *Tours* Young begins to differentiate more closely between the breeds and a classification is arrived at by Culley some sixteen years after the first issue of Young's travel diaries.[24] Since his classification is followed by later writers, I have used it in com-

[23] G. M., *The New State of England* (1691), 124. They were well spoken of in 1659: see Edward Leigh, *England Described*, 112; Edward Chamerlayne, *Angliae Notitia* (18th ed. 1694), 20; Herman Moll, *A System of Geography* (1701), 36. Also Moll's *New Description of England and Wales* (1724), 310; Emmanuel Bowen, *A Complete System of Geography* (1747), 213; T. Hale, *A Compleat Body of Husbandry* (London, 1756), 209; Edward Lisle, *Observations on Husbandry* (2d ed. London, 1757), II, 99; John Ball, *The Farmer's Compleat Guide* (1760), 396; *England Illustrated* (1764), I, 373; A Society of Gentlemen, *England Displayed* (1769), 88; *England Described* (1788), 217. Most of these compare the Lancs. with the Somerset cattle. Other writers give the best breeds as Yorks, Derby, Lancs. and Staffs. These are: John Mortimer, *The whole Art of Husbandry in the way of Managing and Improving Land* (London, 1707), 166 ff; Robert Brown of Somersetshire, *The Compleat Farmer* (London, 1759), 21. In his *General Treatise of Husbandry and Gardening* (London, 1726), 79ff., Richard Bradley says Red are largest in England, and again that Lincs. and Som. are good,—see his *The Gentleman's and Farmer's Guide for the Improvement of Cattle* (1729), 127 ff. In *The Cattle Keeper's Assistant* (9th ed.), 32, Josiah Ringsted thinks Red are best.

[24] George Culley, *Observations on Livestock* (London, 1786).

TABLE II

Devons (Middle-horns)

REFERENCE		WEIGHT	REMARKS
		pounds	
County Reports:			
Devon. R. Fraser, 1794, p. 32		min. 896 max. 1344	South Devon larger and heavier than North
Essex. Chas. Vancouver, 1794, p. 123	ox cow	1040 640	
Wm. Marshall. Rural Econ. of W. of England, 1796. II. 14		min. 840 max. 980	
Annals of Agric., XXXVII (1801), 470		min. 1200 max. 1600	Winter Trade Beasts fattened by Darke of Bredon
		min. 800 max. 1040	Summer Trade Beasts by the same
George Garrard. A description of the different varieties of Oxen, etc., 1800.		max. 900	
Letters, etc., to Bath Soc., X. (1803), 223	cow cow ox	min. 480 max. 800/960 min. 960 max. 1344	The largest ox was exceptional. Example given by Exton of Hartland in writing "on feeding stalled cattle on oat chaff"
County Report. Glos. Thos. Rudge, 1807, 190		960	Good Devon seldom exceeds
Devon. Chas. Vancouver, 1808. 215	cow	640	Judged to be
224	cows	480/560	Moorland grazing
225	ox	min. 960 max. 1040	Best of South Hams
	cow	672	1¼ acre will graze 6 cwt. Cow
226		672	Cow or steer of 6 cwt
327	cow ox	640 880	Full size fat Full size fat
332		640	Number of both fed at Hartland last year
334		1040	Six year-old South Ham oxen
Durham. John Bailey, 1810, 239	ox cow	1006 827	One imported: age 3 years 10 months
Richard Parkinson, Treatise on Livestock, 1810	cow	min. 420 max. 560	These are cattle in one particular herd
	ox	min. 560 max. 840	
Derby. John Farey, 1815, 75		972	Weights of some breeding. 8 years old

piling tables of weights. The middle-horns have now been more carefully separated, the Devons, the Herefords and the Sussex cattle being recognized as the best sorts of this breed. The Long-

horns are described under county names, but are still Longhorns and can be recognized. The Shorthorns are given different names, but are also recognizable. The Welsh and the Scotch and the imported Irish are specifically mentioned. The Wild White are of such comparative insignificance in numbers and distribution that it is hardly necessary to deal with them meticulously.

TABLE III

Herefords (Middle-Horns)

REFERENCE	WEIGHT	REMARKS
	pounds	
George Culley. Observations on live-stock, 1786	min. 840 max. 1400	Given in a list of average animals of different breeds
County Report. Brecon. John Clark, 1794, p. 55	min. 784 max. 1568	Given in an argument of comparative sizes
Communications to the Bd. of Agric. II. (1800), pp. 176 and 187	1200	
Hereford Breed. T. A. Knight	1680	
County Report. Glos. Thos. Rudge, 1807, p. 190	1280	Heaviest Herefords easily brought to
County Report. Hereford, John Duncumb, 1805, p. 123	600	Well bred heifer 3½ years, after calving
County Report. Herts, A. Young, 1805, p. 185	1280	Used in a feeding trial (8 pounds stone has been used)
County Report. Northants, W. Pitt, 1809, p. 132	1120 1200	Mr. Bull of Daventry thinks his "may come to." See also p. 135
W. Bingley. Memoirs of British Quadrupeds, 1809	cows min. 720 max. 960	
	ox min. 1120 max. 1600	
Parkinson. Treatise, 1810	cow min. 700 max. 980	
	ox min. 980 max. 1400	
Derby. John Farey, 1815, p. 75	1235	Weights of some breeds

Tables II, III and IV show the weights of Devon, Hereford and Sussex cattle that were recorded between the publication of Culley's *Observations* in 1786 and a date approximately 1815. From these tables it seems that these three breeds did not change much in general weight during the period. The Devons perhaps did not, as a rule exceed 1,000 pounds dead weight, the Herefords have been slightly heavier, as were possibly the Sussex. The

Longhorns were decidedly below this average (Table V). The Shorthorns, when produced by "improvers," were the largest breed of all, but many comparatively small animals are recorded.

TABLE IV

Sussex (Middle-horns)

REFERENCE	WEIGHT	REMARKS
	pounds	
Culley. Observations, 1786	min. 840 max. 1400	Average animals
Annals, XVII, 1792, p. 226	860	Est. dead weight average of 1 ox, 2 steers and a heifer used in a feeding experiment
Kent. John Boys, 1794, p. 94	min. 8/900 max. 1200	
p. 103	min. 900 max. 1400	Old plough oxen
Sussex. Rev. A. Young, 1794, p. 45	min. 800 max. 1120	100 and 140 st. (st. of 8 pounds used in calculating)
p. 73	1120	Pevensey Marsh fattens to this
Sussex. Rev. A. Young, 1808, p. 246	1120	Mean weight when brought to Smithfield
p. 120 p. 121	1120 1280	Speaking of what this size will eat
	1120	Clutton of Cuckfield fattened 12 to this
p. 159	1120	6 fatting beasts. Gen. turned off work at 6 and killed at 7 years old
p. 244	1626	Feeding experiment at Petworth: 1 beast
Bingley. Memoirs, 1809	ox min. 840 max. 1400	
Parkinson. Treatise, 1810	ox min. 840 max. 1400	
Hants. Chas. Vancouver, 1813, p. 353	1120	Average when fat
p. 354	840	Sir H. Tichborne's 2 or 3 plough teams
p. 356	840	Teams worked at Brockenhurst: broke at 3, worked till 6 or 7 years
Kent. John Boys, 1813, p. 121	min. 900 max. 1400	Old plough teams—see 1794 Ed.

The "giants" were in all likehood the animals which seized the eye and the imagination of those writers, who were only too ready to believe in the immense development of agriculture production.

So far as the Scotch animals were concerned the Galloways

probably increased in average size somewhat during the century, but there were still large numbers of small Highland cattle

TABLE V

Longhorns

REFERENCE	WEIGHT			REMARKS
		pounds		
Wm. Marshall. Mid. Counties, 1790, II, 2			560	Average of 100 Yearling and 2 year heifers sold at Belton Fair estd. to make this weight at Michaelmas.
Cheshire. T. Wedge, 1794, p. 31			700	Average of different breeds—all sorts of crosses
Cumberland. Bailey and Culley, 1794, p. 20		min.	700	No distinction made between breeds here
		max.	840	
Leicester. John Monk, 1794, p. 57	cows		9/1000	Approximate weights given 8/9 10/12 cwt. Leicesters
	ox		10/1300	
Stafford. W. Pitt, 1794, p. 46		min.	560	"Few fat cows above 50 stone"
		max.	960	
N. Riding. Tuke, 1794, p. 62		min.	420	Cattle of W. Moorlands, either L. H. or cross between L. and S. H.
		max.	560	
Northumberland. Bailey and Culley, 1797, p. 122			840 1120	Sold at 3½ years old
Lincoln. A. Young, 1799, p. 297			756 840	Spayed heifers 4 years old
			840 980	Christmas oxen
p. 299			784 840	Wright of Spilsby's Durhams; 3 year olds
Garrard, Description, 1800	cow		640 960	
Bingley. Memoirs, 1809		min.	640	Lancashire Longhorns
		max.	960	
Leicester. W. Pitt, 1809, p. 232			960	Must have grown well to come to — at 6 years 2 months
	cow	min.	640	General size of Leicester cattle
		max.	800	
	ox	min.	800	
		max.	1200	
Northants. W. Pitt, 1809, p. 135			960 1200	Estimated average given by an anonymous farmer
p. 138			800	Given in a general estimate
Hunts. R. Parkinson, 1813, p. 225			700 840	Comparing oxen for ploughing: L. H. never come to exceed 50/60 st.
Derby. John Farey, 1815, p. 28			784	Jowett Sen. 4 years old. New Leicester L. H.

grazed in Yorkshire and the counties on the road to London at the end of the period (Table VII).

TABLE VI

Shorthorns: Holderness, Dutch, Teeswater, Lincolns, etc.

REFERENCE		WEIGHT		REMARKS
			pounds	
Culley. Observations, 1786.			min. 840 max. 1400	
Annals, XIV, 1790, p. 141			1213	Durham? S. H. Young's expt. in live and dead weight
E. R. Yorks. I. Leatham, 1794, p. 34			952	? Live weight said to lose 4 st. driving 110 miles
		ox	840	Average p. 52 oxen from 840/1540 and p. 53 cows from 560/840 pounds
	p. 53	cow	672	
N. Riding. Tuke, p. 62			1260	Owned by Henry Peirse. See 1800 Ed, p. 249
Lincoln. A. Young, 1799			980	Average weight of Yorkshire or Lincoln breed
	p. 177		560 980	T. Fydale of Boston's beasts 1 av. acre
	p. 178		1120	9 of these av. 12 acres at Immingham
	p. 192		700 1400	Bullocks—general size
	p. 288		840 1260	Lincoln oxen about Boston
	p. 296		1820	Dalton of Kneith has fatted Teeswater to — 7 years
			1120	Fat at 5 years old
Garrard. Description, 1800		cow	min. 840 max. 1400	
		ox	min. 1960 max. 2240	
		ox	min. 1120 max. 1400	Teeswater breed
N. Riding. Tuke, 1800, p. 249			2277	Owned by Henry Peirse. Oct. 1797
	p. 251		1260	5 year old cow killed spring of 1793? Peirse's
	p. 251		1392	4 year heifer Teeswater 1799
	p. 251		1190	5 year hornless cow
Annals, XXXVII, (1801), p. 513			1540	"one of the finest ever shown" at Smithfield
Middlesex. John Middleton, 1807, p. 410			700	An ox of medium size
Rutland. R. Parkinson, 1808, p. 122			1120 1260	Some of Princep's cows must weigh — which has astonished me more than anything I ever saw
Bingley. Memoirs, 1809		ox	min. 840 max. 1400	
Parkinson. Treatise, 1810		ox	min. 700 max. 1260	Teeswater

TABLE VI—*Concluded*

REFERENCE	WEIGHT	REMARKS
	pounds	
Durham. John Bailey, 1810, p. 227	2124	Hill of Blackwell first record of great size
p. 228	2104	Milbank of Barningham 2nd
p. 233/4	882 1050	2 years old would have been only 40 st. if not so fat
p. 235	700 756	Walton of Middleton in Teesdale now sells at this weight 2¼ years old
E. Riding. H. E. Strickland, 1812, p. 229	980 1190	4/5 year olds fat — and upwards
p. 230	770 910	4 year olds reach
Hunts. R. Parkinson, 1813, p. 225	980 1120	Comparing with growth of S. H.

The Suffolk dairy beasts (Table VIII) were the same size at the end as at the beginning of the century and their kindred with the Galloway has already been noticed.

About the same weight of meat was supplied by a Welsh beast, the Reds being slightly heavier than the Blacks (Table IX).

The conclusion is forced upon us that King must have been deceived about the average weight of cattle sold at Smithfield Market at the end of the seventeenth century, or, if he was not, that the larger cattle were not sent to London, old cow beef and old plough-ox beef being consumed in the neighbourhood where it was produced, or in the towns near by. It is quite certain, in spite of the few early eighteenth century weights recorded, that a large proportion of the cattle of the country were larger than the weight of 370 pounds dead, given by King.

The influence of the introduction of the so-called "Dutch" Shorthorn upon the average size has no doubt also been exaggerated. While these cattle were dispersed through the north-eastern counties, Yorks and Lincoln and the dairies of the environs of London used them, it is clear that they were not all of gigantic size. Moreover a large area of the country was still devoted to the production of the smaller breeds in the early nineteenth century. Wales, the North West, the Midlands, Norfolk and Suffolk and Kent as well as some of the south-western counties

TABLE VII

Scotch and Irish

REFERENCE	GALLOWAY	HIGHLAND	
	pounds	*pounds*	
Annals, III, (1785), p. 496	630		Average of 20 weighed by Mr. Mecro of Barrow
Culley. Observations, 1786.	min. 560 max. 840	280 490	
Marshall Norfolk, 1787, I, p. 342	840 max. 1120	cow 280- 560 ox 560- 700	
Annals, XIV, (1790), 141 p. 360	574		Young's experiment. 2 Scots
Marshall. Midlands, 1790, I, 364		560- 700} 980-1120}	Irish imported
Cumberland. Bailey & Culley 1794, 20	700 840	700 840	
Norfolk. Nathl. Kent, 1794, 18	min. 560 max. 700		
Notts. Robt. Lowe, 1794, 17	700 840		
Cumb. Bailey and Culley, 1797, p. 208	700 840		Mr. Toulfen fats to this on a good pasture
Notts. R. Lowe, 1798, 123		700 840	Irish: preferred by Mr. Wright
Annals, XXXII (1799), 344	1071		5 year old recorded by Brantwayt of Taverham. Average of 68 weighed, 1783, by Mr. Mure of Saxham, Suffolk
76		480	
Garrard. Description, 1800		min. 280 max. 336	
A. Farmer. Rural Recreations, 1802, p. 127		560	Average weight
Norfolk. A. Young, 1804, p. 228	630		Thirty years ago turnips would fatten to
Essex. A. Young, 1807, I, p. 388		480	Scots cow fed on potatoes. Scots of this size gain one-third in 12 months
Rutland. Richd. Parkinson, 1808, p. 118	700		Mr. Fludfer has some handsome Scotch
Leicestershire. W. Pitt, 1809, p. 154	720 560	280	
Bingley. Memoirs, 1809	840 (980)	420 (560)	The ( ) are sometimes
Parkinson. Treatise, 1810	ox min. 560 max. 840	280 490 (560)	The ( ) are sometimes
Kent. John Boys, 1813, p. 172	240 500		Polled Scots brought in for grazing

dealt in the Welsh, the Scotch, and the Irish, the native Norfolk and the Suffolk Duns, all of which were comparatively small

beasts. Moreover the widely distributed Longhorns which inhabited the Midlands and the Western counties bordering on Wales were not sensibly larger than they had been. The effect of Bakewell's improvements although remarkable, cannot have been even approximately universal, and had not been towards increasing size, but towards producing more meat and less bone.

TABLE VIII
Suffolk

REFERENCE	WEIGHT	REMARKS
	pounds	
Culley. Observations, 1786	700	
Marshall. Norfolk, I, p. 324	560	Norfolk On the Suffolk Breed of Cows Liveweight estimated 504 pounds
Letters, etc. Bath Society, III, (1786), p. 282	336	
Annals, XIV (1790), p. 141	722	Young's experiment. 5 Suffolk weighed
Suffolk. A. Young, 1794, p. 38	700	"Few fat cows above 50 st."
Suffolk. A. Young, 1797, p. 179	700	"Few rise, when fattened, to above 50 stone"
Annals, XXXII (1799), p. 542	620	1 cow weighed by F. J. Brown, M. P. for Dorset
Garrard. Description, 1800	min. 560 max. 700	
Bingley. Memoirs, 1809	700 cow min. 420 max. 560	
Parkinson. Treatise, 1810	ox min. 560 max. 700	

It is true that the Longhorn was superseded early in the nineteenth century.[25] As Arthur Young says,[26]

> The particular merit of the Dishley breed is of small consequence, compared with the just principles Bakewell disseminated in the many journeys. . . . nor can we form any true estimate of the change he effected, unless we reflect upon

[25] The Rev. Henry Berry, "On the original character of our native breed of cattle—their progressive improvement, and attendant circumstances; with some notices of our present stock," *British Farmer's Magazine*, VII (1833), 267.

[26] *On the Husbandry of Three Celebrated British Farmers, Messrs. Bakewell, Arbuthnot, and Ducket: being a lecture read to the Board of Agriculture . . . June 6, 1811* (London, 1811), 6 and 7.

TABLE IX

Welsh—Black and Red

REFERENCE	BLACK WEIGHT	RED WEIGHT	
	pounds	*pounds*	
Cornwall. R. Fraser. 1794, p. 46	560 672		Native blacks and so included under Welsh
Monmouth. John Fox. 1794, p. 14		896	Glamorgan — kin to Hereford
Brecon. John Clark. 1794, p. 55	448 896		Weights used in an argument
Pembroke. Chas. Hassell. 1794, p. 45		cows 504 ox min. 700 max. 784	Some rise to 1120 pounds Doubtful whether red or black
North Wales. George Kay, 1794	640		
Anglesey p. 25	720 480	720	On turnips rise to 880 pounds
Montgomery p. 20	560 640	880 880 1040	4 years old 5 years old: many reds much heavier
	cow 504 ox min. 700		Other Welsh from North 640–880 pounds
Garrard. Description, 1800	max. 784		Montgomery cow beef 560–800 pounds
Lawrence. Gen. Treatise, 1805	min. 640 max. 1040 some 1120	800 960	North Wales Black, if same stone (8 pounds) used 480–960 pounds
Herts. A. Young, 1805, p. 185	720 or 1260		Doe of Bygrave of 90 st. probably 8 pound stones
Leics. W. Pitt, 1809, p. 154	720 640		Some Welsh
Northants. W. Pitt, 1809, p. 132	480		Pontypool bullocks
p. 133	720 960		Bought by Bosworth of Holmby Lodge
North Wales. Walter Davies, 1810, p. 311	640} 880}		3 to 4 year olds
North Wales. Walter Davies, 1810, p. 311	1040} 1200}		Working oxen kept till 8 or 9 years old
North Wales. Walter Davies, 1810, p. 313	560} 800}		Montgomery cow beef—"brinded"
Cornwall. G. B. Worgan, 1811, p. 140	336 448		Native breed: black like Welsh
South Wales. Walter Davies, 1814, p. 215		720} 800}	Pembroke oxen
		480} 560}	Pembroke cows
		880} 960}	Castle Martin oxen—some up to 1280 pounds
		640} 800}	Glam. Vale brown cows—some 1040
		960} 1120}	Glam. Vale brown oxen—some heavier
South Wales. Walter Davies, 1814, p. 216	240 320		In coal vallies deemed good beef
p. 218	480 560		Carmarthen vales cows

the circumscribed locality of every distinct breed of livestock that was then found in the Kingdom.

The Sussex were not found in Kent; the North Devon were confined to an equally original district, the Suffolks were scarcely heard of in any other county; the Shorthorns were found in Durham and part of Yorks, and afterwards travelled to Lincoln. By the end of the century this isolation of the breeds had disappeared and a variety of breeds was found in most of the grazing counties.[27]

But that there was an increase in the volume of meat production cannot be doubted. The population doubled in the century and although a large proportion rarely or never ate "butcher's meat," their flesh diet being confined to bacon and little of that, the consumption of beef certainly increased. If the cattle had not been increased in size, how was this additional supply obtained? Some increase in the animal there was. John Middleton estimates, not perhaps unreasonably, that about 1800 the average beast provided 720 pounds of meat over the whole of the livestock of the country.[28]

We have few estimates of the number of cattle in the country and those we have are really only guesses. King estimated four and one-half million in 1696. Young slightly more than three and one-half in 1779,[29] and Mulhall thought that there were only 5,200,000 in the United Kingdom in 1830. While these figures cannot be freely accepted, they approximate to the modern statistics, and it can be supposed that the actual numbers of the cattle in the country did not vary a great deal except when there was a cattle plague. The eighteenth century was not free from visitations of grave disorders and misfortunes among the animals.

Disease had been rife in the early years of the century, but died out by 1714 only to break out again in 1740.[30]

[27] See County Reports.

[28] *View of the Agriculture of Middlesex; with Observations on the Means of its Improvement, and Several Essays on Agriculture* (London, 1798), 488; (London, 1807), 643.

[29] *Political Arithmetic.*

[30] Richard Brocklesby, *An Essay Concerning the Mortality, Now Prevailing among the Horned Cattle, in Several Parts of Europe, and chiefly about London* (London, 1746).

In that year many cattle died in Cheshire, Wales and Devon,[31] while there was loss of cattle in 1741 owing to the failure of the hay harvest[32] and disease broke out again at Hull in 1748.[33] It is also recorded in London in 1744 and an order to slaughter the diseased beasts was made in December, 1745.[34] Layard compares the ruin caused by this outbreak with that of 1711–1713.

Again in 1762 the lean stock died because a dry summer had caused a scarcity of fodder, while a shortage in the meat supply was caused by the floods in the winter of 1770–1771 which destroyed the fodder, the frost spoiling the turnips and the drought in the following summer spoiling the hay harvest.[35] This last series of misfortunes caused one writer to ask where the country would have been if there had been no Scotch or Welch cattle.[36] Again William Marshall states that if no Irish arrive, the grazing grounds of Yorkshire are not fully stocked,[37] and remarks upon the few cattle apparent when the supply was kept back by east winds in April, 1786.[38]

The development of size had added something to the meat supply, but it does not look as if there was any large increase in numbers. The meat supply cannot have doubled by size alone; some other method of increasing it must therefore have been discovered because it was certainly competent to feed the population at the end of the century as it had been at the beginning.

The explanation is largely to be found in the change from oxen to horses for ploughing, and the consequent release of stock for fatting at an earlier age. Only in those regions where oxen were still used for ploughing was the beef so old at 1800 as was in 1700. In the earlier period it was common to put the

[31] William Ellis, *The Modern Husbandman* (London, 1750), III, 158.

[32] *Id.*, IV, 106.

[33] Malcolm Flemyng, *A Proposal in order to Diminish the progress of the distemper amongst the Horned Cattle, &c.* (London, 1755).

[34] Daniel Peter Layard, *An Essay on the Nature, Causes, and Cure of the Contagious Distemper among the Horned Cattle in these Kingdoms* (London, 1757).

[35] *A View of Real Grievances* (1772), 237.

[36] John Dove, *Strictures on Agriculture* (London, 1770).

[37] *The Rural Economy of Yorkshire* (London, 1788), II, 210.

[38] *The Rural Economy of the Midland Counties* (London, 1790), II, 293.

oxen to work at three years old and to fat them off at about ten.[39] By the third quarter of the century the earlier age of fatting was beginning to be remarked upon.[40] While other writers still remark upon the older ages of the fatting cattle,[41] there is no doubt that the tendency towards early maturity was present; there was a growing demand for smaller joints and the economy of feeding involved in producing younger animals in rapid succession was appealing to the farmers.[42]

[39] John Houghton, *Collections for the Improvement of Husbandry, relating to Corn* (London, 1681), III, 109; A. S. Gent, *The Husbandman . . . Compleat Instructor* (1697); John Mortimer, *The Whole Art of Husbandry in the way of Managing and Improving Land* (London, 1707), 166 ff; Giles Jacob, *The Country Gentleman's Vade Mecum* (London, 1717), 14; John Laurence, *The New System of Agriculture, being a complete Body of Husbandry and Gardening in all parts of them* (London, 1726), 129; T. Hale, *A Compleat Body of Husbandry* (London, 1756), 209 ff.

[40] *Political Speculations* (1767), 16, Graziers give us beef of 2/3 years old instead of 6/7; Arthur Young, *The Farmer's Tour through the East of England* (London 1771), I, 392,—4 years old fat; Thomas Comber, *Real Improvements in Agriculture* (London, 1772), 57,—3 years fatted in rack rented districts, other older; William Marshall, *The Rural Economy of Norfolk* (London, 1787), I, 323,—small cows fat freely at 3, ox at 4/5.

[41] John Campbell, *Political Survey* (1774), 166–167, 169,—Bulls no use at 4.5 years,—Cows prime between 5–8: ox at 7. Ox fatted 10/11. John Mills, *A Treatise on Cattle* (London, 1776), 293,—fatted at 10. Henry Home, *The Gentleman Farmer; being an attempt to improve Agriculture by subjecting it to the test of Rational Principles* (Edinburgh, 1776), 177,—Ready at 7. William Marshall, *The Rural Economy of Glocestershire* (Glocester, 1789), I, 221,—8/9 years old cows fatted: some Somerset and a few Devons at 6.

[42] James Anderson, *Recreations in Agriculture, Natural History, Arts and Miscellaneous Literature* (London, 1800), III, 92,—Small beasts will always find a ready market; Charles Gordon Grey, "On the most profitable size of farming cattle," *Letters . . . to the Bath . . . Society*, X, 263,—"in rich land where large oxen have usually fed; the graziers there (generally) are feeding Scotch, finding the smaller more profitable. And if we look to Smithfield, we find the smaller animal is always taken in preference, by the greater number of butchers." See also William Fordyce Mavor, *General View of the Agriculture of Berkshire* (London, 1809), 293; G. B. Worgan, *General View of the Agriculture of the County of Cornwall* (London, 1811), 138; John Bailey, *General View of the Agriculture of the County of Durham* (London, 1810), 176 and 226; Arthur Young, *General View of the Agriculture of Hertfordshire* (London, 1804), 185; Arthur Young, *General View of the Agriculture of the County of Lincoln* (London, 1799), 295. See also opposite opinion on page 296. John Middleton, *A View of the Agriculture of Middlesex* (London, 1798), 411 ff; John Bailey and George Culley, *General View of the Agriculture of the County of Northumberland* (London, 1794), 122.

The increase in size and the earlier maturity of the beasts taken together must therefore have supplied the enlarged demand of a population which had doubled itself in a century, but there is certainly no ground for the large, but vague, generalisations which have given us our idea of the measure of the increase of the average size of the animals, and indeed such an arbitrary figure applied to a great diversity of beasts can be expected to be neither accurate nor particularly informative.

AGRICULTURE IN THE MUSEUM OF SCIENCE AND INDUSTRY FOUNDED BY JULIUS ROSENWALD*

By Russell H. Anderson†

What properly constitutes a museum of agricultural history? What are its limits, purposes, and point of view? The precedents to follow in organizing such a museum are few. The famous Deutsches Museum of Munich, the Science Museum of South Kensington, England, the Technisches Museum at Vienna, and the Conservatoire des Arts et Métiers at Paris afford many helpful suggestions but none of these institutions covers the scope of the division as planned at the new Museum of Science and Industry founded by Julius Rosenwald and now being organized at Chicago.

The image which will probably come to mind first is that of a collection of antiquated agricultural machines. These have a place but if the museum is to be distinctive and make an important contribution to the field its scope must be greatly widened. It must cover the industry from the fundamental factors underlying agriculture to the manufactured foods and fibers as they reach the consumer. It must begin with the plant and animal cells as primary manufacturing units, showing their structure, raw materials, processes, and their final product. The relation of soils, weather factors, microbiology, etc. to plant and animal life is a pertinent and instructive phase of this subject. Inasmuch as the purpose of the museum is to show the technical progress of man it will be necessary to portray the advancing state of man's knowledge in these fields as well as the latest information which we possess. Likewise the scientific progress in

* The Museum of Science and Industry has until recently been known as the Rosenwald Industrial Museum. It will occupy the restored Fine Arts Building in Jackson Park.

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plant and animal breeding and the social results that have followed are quite as much within the scope of an adequate agricultural history museum as the development of the use of mechanical equipment which obviously belongs to such an exhibit.

The technical, economic, and social results of the improvement of agricultural tools and machinery have been so momentous that the vivid and picturesque story of their development must be told in some detail. Technical improvements in the methods of agriculture are elusive and difficult to portray but they are of the utmost importance and merit inclusion. Inasmuch as the purpose of agricultural activities has always been to supply man with food, clothing, and shelter, the products of the soil must be traced through the processses of manufacture until they are ready for the ultimate consumer. One other large aspect of the industry, that of the social effects, remains to be considered. We are interested not only in what changes have occurred in agriculture but also in the social results that have followed both in the rural sections and in the cities.

Through the entire museum there runs the constant thought of teaching. The museum must not be a mere collection of objects arranged for the passive instruction of a drifting visitor. Completeness of detail may in some cases be sacrificed for a more effective presentation of the progress of man in science and the arts. Exhibits must be arranged in such sequences that a visitor, who will be directed where he should go, will grasp the whole sweep of development and its consequences. Where practicable, machines will be in operation. For example, power will be transmitted to the master wheel of a grain binder which will elevate and bind grain as in the field. A visitor will operate a knotter slowly and observe its action. If he feels so disposed he may thresh some wheat with a flail and winnow it by hand. He may then press a button and start a modern threshing machine or combine, and observe its machinery in action. Nor must objects alone be depended upon. Dioramas of the most approved type, still pictures, transparencies, diagrams, lighting and sound effects, etc. must play their part. Scattered throughout the exhibits

there will be motion picture projectors and lanterns to supply the gaps.

The plans for the museum are necessarily somewhat tentative at this time but they are sufficiently far advanced that a vision of a trip through the agricultural section may be suggested. As the visitor steps into a hall of dioramas he will be given an historical introduction to the subject. Before him on miniature stages, with lighting effects and other accessory means, he will see man before he became an agriculturist, strictly speaking. He will see the pastoral nomad, who has taken a step in the direction of settled agriculture; the medieval peasant in his self-sufficing manor world; the English farmer in the days of Tull and Bakewell; the primitive agriculture of our own frontier; and the modern farm with its multiplicity of mechanical improvements.

Having secured this view he will enter that portion of the exhibit in which presentation is partly systematic and partly historical within each division. Here he will see plant structures and their functions, plant foods and processes, principles and practices of breeding, soils, weather factors, microbiology, etc. He will then follow through the improvements in plowing, sowing, and harvesting. Here he will see the plows of all ages from the stick plow to the modern tractor plow, arranged to show the evolution of the principles involved. Likewise, the sequence of harvesting machines will show the principles employed from the hand sickle and Gallic stripper to the modern combine. Here as elsewhere the visitor will be able to see the important steps in the development without an unnecessary collection of unessential materials. After he has thus studied the fundamental factors of the industry and the usual farm operations the visitor will see a sequence covering forage and fiber crops, economic entomology, horticulture, drainage, erosion, dry farming, irrigation, farm homes and scences, and the large subject of live stock. Here the historical aspects and present day knowledge of breeding, feeding, barns and equipment, and dairying will be shown.

A logical sequence will take one through foods, showing their sources, preservation, chemistry, and manufacture. The im-

portant food manufacturing divisions, such as milling and baking, packing, sugar manufacturing and refining, etc., will be systematically portrayed. In the same way the fibers produced in agriculture will be traced from the growing field through the processes of manufacture until they become cloth, rope, etc. Such a brief list of topics cannot give an adequate picture of the division but it may suggest the broader outlines of the project.

NEWS NOTES AND COMMENTS

MATERIALS FOR AGRICULTURAL HISTORY

The materials in the office files of the late Dr. A. C. True have been filed with the collection on agricultural history which is being assembled by the Agricultural History Society and the Division of Statistical and Historical Research of the U. S. Department of Agriculture for filing in the Department's library. This material from Dr. True's files consists of rare pamphlets and catalogs pertaining to the early development of agricultural education in the United States, excerpts from the *Congressional Globe* and *Congressional Record* of all material pertaining to agricultural education and extension, and letters or copies of letters of agricultural leaders and congressmen interested in the enactment of legislation promoting agricultural education and extension in America. Research workers in agricultural history will be grateful to those who had this material saved. It is hoped all knowing of similar collections of material will see that they are saved.

A CHINESE AGRICULTURAL LIBRARY

Many readers of Agricultural History will be interested in the work of the Research Library of the College of Agriculture and Forestry, University of Nanking, organized by Mr. Harry Clemons, now librarian of the University of Virginia.

The Research Library was begun at the instigation of Dean John H. Reisner of the Nanking College of Agriculture to make known both the extent and content of the old Chinese literature pertaining to agriculture, famines, and related subjects, and also to make available for use of the faculty and students the large amount of general information bearing on agricultural problems which have appeared in English in periodicals published by various organizations and institutions in China. The Research Library is a department of the university's library and its staff are

members of the faculty of Agriculture and Forestry. The collection is now an extremely valuable one and probably contains ninety per cent of all the known extant works on agriculture and related subjects.

Indexing of all agricultural and related articles in English and Chinese publications has been undertaken, at the suggestion of Dr. Walter T. Swingle of the Bureau of Plant Industry, U. S. Department of Agriculture. In 1921 he arranged to have Miss Katharine H. Wead go to the University of Nanking Library to develop the method and train Chinese indexers.

A modern compilation of all material referring to agriculture and related subjects in old Chinese agricultural literature is also being made. Wherever possible original editions of the various works are being used. When the task is completed a great mass of very valuable information thus far for the most part unknown will be available. The plan for compiling this 'Agricultural Encyclopedia Sinica' was conceived by Mr. Wan Kwohting, chief of the Research Library, and is being carried out under his direction.

Simultaneously with this and similar work in China is the increased interest in the promotion of Chinese studies in American universities. The Library of Congress is rapidly increasing its collection of Chinese material; in this work, the Research Library at Nanking has been coöperating effectively in the collection and purchase of material. The American Council of Learned Societies has launched a movement which has adopted a program urging that Chinese language, literature and civilization be included as part of regular curriculums in America. It has also undertaken the making of bibliographies, surveys of Chinese literature, a catalogue of Far Eastern manuscripts in the United States and the establishment of a series of monographs on Chinese subjects.

PERSONAL

Avery O. Craven, whose rank at the University of Chicago has been raised to that of professor, is on leave of absence during the fall quarter and is using the time to complete a biography of Edmund Ruffin.

Professor R. W. Kelsey of Haverford College has brought out a small pamphlet entitled *Farm Relief and is Antecedents* (Philadelphia, McKinley Publishing Co., 1929) as one of a series called Handbooks of Citizenship, designed to be topical supplements to textbooks of American history and government.

In our January issue a statement was made concerning Professor Ulrich B. Phillips's receiving the Atlantic Monthly prize on the manuscript of his *Life and Labor in the Old South.* A further distinction has since been bestowed on Professor Phillips in his being awarded the Albert Kahn Prize, a sum of $5,000, awarded annually, to permit the recipient to devote a year to foreign travel. Professor Phillips sailed on August 15 for a year's trip around the world. He expects to spend part of the time studying negro tenant labor and British management in the cotton fields of the Sudan. Upon his return, he is to become professor of American history at Yale University.

Professor Arthur H. Hirsch, head of the department of history at Ohio Wesleyan University, is teaching in the place of Professor Phillips at the University of Michigan during the current academic year.

Charles T. Leavitt, a graduate student at the University of Chicago, spent the summer doing research in the United States Department of Agriculture Library on the Livestock Industry in the United States prior to 1840.

Rodney H. True, head of the botany department of the University of Pennsylvania, is to present a paper based on a collection of letters written to Jared Eliot in the Yale library at the meeting of the American Association for the Advancement of Science, at Des Moines, December 31, 1929.

COMMENTS ON BOOKS AND ARTICLES

Economic Geography for October, 1929, contains the following articles of interest to workers in agricultural history: *Readjust-*

ments in the Post-War Cotton Culture, by Earl C. Case, associate professor of geography at the University of Cincinnati; *Tung Oil: Florida's Infant Industry*, by M. Ogden Phillips, formerly a professor at the University of Florida; *The Farm Problem*, by Robert Stewart, dean of the College of Agriculture in the University of Nevada; *Forest Regeneration in Porto Rico*, by William D. Durland, formerly of the University of Porto Rico; and the sixth installment of *Agricultural Regions of South America*, by Clarence F. Jones of Clark University.

The issue of the Mississippi Valley Historical Review for September, 1929, includes *The Natural Limits of Slavery Expansion*, by Charles W. Ramsdell, professor of American history at the University of Texas; *Frederick West Lander, Road Builder*, by E. Douglas Branch, research associate of the State Historical Society of Iowa; and *The End of the Open Range in Eastern Montana*, by Robert S. Fletcher, assistant professor of American history at Oberlin College. Mr. Ramsdell's article is also printed in the Southwestern Historical Quarterly for October, 1929; Mr. Fletcher's is part of a larger study based on research undertaken while he was with the U. S. Bureau of Agricultural Economics.

Among the articles in the Geographical Review for October, 1929, are *The Repopulation of the Roman Campagna*, by Professor Roberto Almagià of the University of Rome; *Agriculture and Soils of Palestine*, by A. T. Strahorn of the Bureau of Chemistry and Soils of the U. S. Department of Agriculture; and *Geography of a Sugar District: Mariel, Cuba*, by Robert S. Platt, professor at the University of Chicago.

M. Schnebel's article, *An Agricultural Ledger in P. Bad. 95*, in the Journal of Egyptian Archaeology for 1928 (v. 14, p. 34–45), is a study of Papyrus Baden 95, a very important document for agricultural procedure. It is the annual balance sheet of a large estate for four consecutive years in the 7th century, A.D., and includes the financial statement of a tax collector engaged by contract.

Material on butchers, porkdealers, and cattle-market inspectors is given in *The Book of The Prefect,* discovered on a paper manuscript of the fourteenth century in the Library at Geneva by Professor Jules Nicole in 1892, which is translated and edited by A. E. R. Boak in the Journal of Economic and Business History for August, 1929.

An article by Lyman Carrier on *Indian Agriculture* appeared in the Southern Agriculturist for February 15, 1929.

Frances Densmore's *Uses of Plants by the Chippewa Indians* in the Forty-fourth Annual Report of the Bureau of American Ethnology, 1926–1927, is an exhaustive study in which chief attention is given to plants as food and medicine, plants used in dyes, plants used as charms, and plants used in useful and decorative arts.

An article entitled *The First American Farmers. Authentic Accounts of the Red Men's Agriculture* by L. O. Lantis, professor of social science in North Dakota Teachers' College is in the Ohio Farmer for July 20, 1929. A second article by Professor Lantis on *First Americans' Food and Cookery* appears in the issue for July 27, 1929.

An article on *The American Grain Trade under the Embargo of 1808,* by W. Freeman Galpin, appears in the Journal of Economic and Business History for November, 1929.

A history of the garden pea is given in the first chapter of U. P. Hedrick's *Peas of New York* which is volume 1, part 1 of *Vegetables of New York,* in the Report of the New York Agricultural Experiment Station for the year ending June 30, 1928.

A short article on *The Average Farm A Half Century Ago and Today* in the Pennsylvania Farmer for August 17, 1929, considers the trend in size and productivity of the average Pennsylvania farm since 1870.

An article by P. W. Bryan, *Natural Environment in Relation to Human Activity in the Corn Belt of North America*, in Geography for March, 1929, is a useful summary based largely on O. E. Baker's *A Graphic Summary of American Agriculture*, U. S. Dept. of Agriculture Yearbook, 1921; H. H. Barrows' *Goegraphy of the Middle Illinois Valley;* Illinois Geological Survey Bulletin No. 15; and University of Illinois Agricultural Experiment Station Soil Reports.

An interesting, unsigned, illustrated article on *Development of Wisconsin Fairs* appeared in the Wisconsin Agriculturist and Farmer for August 17, 1929.

An article by James E. Poole entitled *Sherman of the Stockyards: He made Chicago the Mother of Markets* in the Country Gentleman for October, 1929, considers John B. Sherman and his work in livestock history as the organizer of the present central, or union, stockyard system.

An article by Professor Earle D. Ross on *The Iowa State Fair* in The Palimpsest for August, 1929, is a history of the Iowa State Fair during the seventy-five years since it was inaugurated in 1854. All who are interested in the history of agricultural fairs will do well to secure a copy of this number of The Palimpsest. The first part of Professor Ross's study is reprinted in Wallaces' Farmer for August 16, 1929, under the title *When Iowa Saw Its First State Fair.*

A Cherokee County Pioneer is the title of a biographical sketch of Henry Roddis, an early settler in northwestern Iowa and a pioneer in the planting of groves and orchards, by his son, Louis H. Roddis, in the Iowa Journal of History and Politics for July, 1929.

The Farmer and Farm, Stock and Home for September 7, 1929, contains an article by Berry H. Akers on *Forty Years of Creamery Cooperation.* It is appropos of the 40th anniversary of

the founding of the Vernon and Zumbro coöperative creameries in Vernon Township, Dodge County, and Rock Dell Township, Olmsted County, Minnesota.

Historical material on dairying is given by B. D. Mason in his *Improved Methods in Manufacturing and Distributing Butter in California* in the Monthly Bulletin of the Department of Agriculture of the State of California for August, 1929. The same number contains a short article on *The Honey Bee—Ancient and Modern* by Frank E. Todd.

The article entitled *Southern Pacific of Mexico is Developing a New Frontier* in the Railway Age for March 9, 1929, by Raymond Chambers is a description of the operating history of the Southern Pacific of Mexico and the traffic outlook for the Mexican west coast and incidentally another chapter in the agricultural history of the area.

An interesting study of land appropriation in Haiti in the seventeenth and eighteenth centuries by Leon Vignols, a resident of Rennes and Paramé, appears under the title *Early French Colonial Policy* in the Journal of Economic and Business History for November, 1929.

F. N. Page's *"Bidentes Haylandie"; A Mediaeval Sheep-Farm* in Economic Journal, Economic History Series, No. 4, January, 1929, is a careful study based on rolls dealing with the sheep-farming industry of the great Benedictine House of Crowland for the years 1258 to 1322.

A Statistical Crime of the Seventeenth Century in the Journal of Economic and Business History for August, 1929, is the title of a study of Exeter grain prices for 1316–1820 by Sir William Beveridge, director of the London School of Economics and Political Science and long a student of the history of prices in England and on the continent.

An article by H. M. Cadell on *Land Reclamation in the Forth Valley* appeared in the Scottish Geographical Magazine for January 15, and March 15, 1929. In the first installment reclamation prior to 1840 is considered; in the second, later reclamation schemes and the work of the Forth Conservancy Board.

A study of *The Repeal of the Corn Laws, 1846* by J. A. Thomas is in the Economicà for April, 1929.

Farmers and Farming in Cambridgeshire, by Ella M. Wilson, appears in the Journal of Geography for March, 1929.

G. E. Fussell's article entitled *Agriculture and Economic Geography in the Eighteenth Century,* in the Geographical Journal for August, 1929, is a study of a number of books published between 1659 and 1788 which deal with agricultural conditions in England.

Thomas U. Sadleir's *The Manor of Blessington,* in the Journal of the Royal Society of Antiquaries of Ireland for December, 1928, is a short article on a manor erected in 1669 by grant of Charles II and consisting of Munfin and other townlands which had become the property of Michael Boyle, archbishop of Dublin, under the Act of Settlement.

A new edition of Arthur Young's *Travels in France during the Years 1787, 1788 & 1789,* edited by Constantia Maxwell, lecturer in modern history in Trinity College, Dublin, has just been published by the Cambridge University Press. This new edition includes the account of the French journeys from Part I of the first edition, together with selections from the "General Observations" in Part II and Volume II of the second edition.

Victor Boret's *L'Agriculture et la Politique* in Nouvelle Revue for January 15, 1929, is a study of the past and present relation of the peasants of France to politics.

Un Essai de Culture Exotique sous l'Ancien Régimé. Le "Peste du Riz" de Thiers (1741), by Paul M. Bandois in the third number

of Revue d'Histoire Economique et Sociale for 1928 (v. 16, p. 586–655) is a study of the efforts of a company of Parisian capitalists to grow rice in Dauphiné, Forez, and Auvergne, they having secured a government monopoly for the cultivation of rice in France.

Under the title *Une Vieil Exposé des Vertus Hygiéniques du Tabac* in Aesculape for November, 1928, Comte de Lapparent gives a memoir by the curé Accarier written in 1787. The curé regretted the false ideas of gallantry which led to the substitution of snuff for the pipe. He believed that tobacco smoke, especially among the poor, helped prevent disease.

An article by the late French diplomat and scholar, Louis Delavand, *Le Commerce des Vins et du Sel en Norvége, au Moyen Age,* appears in the Revue l'Institute Sociale (Solvay) for January-March, 1929.

Jeanne Bouchet's *La Culture du Blé dans les Alpes Françaises (1913–1924)*, in the third number of Revue de Géographie Alpine for 1928 (v. 16, p. 625–669) is a study of wheat culture in the 59 communes of the French Alpine region during 1913–1924.

Der Verkoop van Tuinbouwproducten voorheen en thans by Th. Roosje in Tijdschrift voor Economische Geographie for March, 1929, is an account of the general development of the marketing of horticultural products in the Netherlands, especially in the Streek, a row of villages between Hoorn and Enkhuizen in the province of North-Holland.

H. Allemann's *Aus dem Tagebuch eines Bergbauern vor 100 Jahren* appeared in Blätter für Bernische Geschichte, Kunst und Altertumskunde for December, 1928.

Earl J. Hamilton's *Wages and Subsistence on Spanish Treasure Ships, 1503–1660* in the Journal of Political Economy for August. 1929, is a careful study of the dietaries of common seamen and of

officers on the treasure ships plying between Spain and the Hispanic colonies of the New World, which throws light upon important aspects of the lives of day laborers and of the upper classes in Spain during her golden age.

Fabio Luzzatto's *Prime Linee di Politica Agraria Negli Scrittori Veneti del Secolo XVII* in Giornale degli Economisti for July, 1928, is a critical and descriptive study of the interest in agricultural problems which was shown by the Venetian Republic in the last decades of its existence.

Fabio Luzzatto's *La Politica Agraria nelle opere di Cesare Beccaria, Pietro Verri e Gianrinaldo Carli* as number 3 for 1928 of Annuario della Instituzione Agaria Andrea Pointi discusses the contribution of Cesare Beccaria to the solution of the problem of the distribution of agricultural property and the influence of the prices of farm products upon it; the opinion of Pietoro Verri on the divergence between private and public interests in agriculture, on the problem of the development of pasture to the detriment of wheat and rice cultivation; and the works of Gianrinaldo Carli, particularly the essay in which he sought to demonstrate that the progress of agriculture has no influence whatever on the economic and demographic development of the country while that of industry and commerce is preeminent.

Il Problema della Colonizazione Agraria nella Tripolitania, by E. de Cillis, appears in La Geografiâ for December, 1928.

Gustavo del Vecchio's *Per la Storia della Economia Agraria Italiana* in the Italia Agricola for 1928 is a lecture delivered on the occasion of a session on agriculture and law of the Confederation of Agriculture held at the Law School of Bologna University which outlines the history of agriculture in the different regions of Italy from pre-Roman times to the present.

The third volume of *Encyclopédie Tchécoslovaque: Agriculture,* edited by V. Brdlík and published by Bossard, Paris, 1928, pro-

vides information about every phase of agriculture in Czechoslovakia.

J. A. Waismann's *L'Économie Rural de la Turquie* in Revue des Études Islam for 1928 (v. 4, p. 529–558) is a detailed regional study of rural economy in contemporary Turkey. This article was translated by J. Castagne from the Nowy Vostok of Moscow, 1927, No. 19.

Recent Works in Indian Economic History (1905–1928), by W. H. Moreland, appeared in the Economic History Journal for January, 1929.

In a short article entitled *The Early History of Cotton* in the Agricultural Journal of India for January, 1929, A. James Turner and A. N. Gulati tell of the discovery of cotton fabric in the excavations at Mohenjodaro in Sind ending previous speculations as to the earliest use of cotton and dating it as far back as 2750–3000 B. C. in the valley of the Indus.

In an article entitled *Maoris and the Tenure of their Lands* by L. A. Taylor in the Juridical Review for March, 1929, the results of the failure of Great Britain to recognize the cultural background of the Maoris when the Treaty of Waitangi was signed are given.

An American Pioneer in Japan by Herbert H. Gowen in the Washington Historical Quarterly for January, 1929, is a sketch of Edward Mason Shelton, a member of the Agricultural Commission selected in 1871 by President Grant at the request of the Japanese government for experts in agriculture and colonization. Shelton became superintendent of the governmental farm in Tokyo and the first teacher of American agricultural methods in Japan.

Dorothy J. Orchard's *Agrarian Problems of Modern Japan* appeared in the Journal of Political Economy for April and July, 1929.